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		Date : 16 / 9 / 2010
		Supersedes : 1 / 11 / 2008
Butane n-		014-ALD

1 Identification of the substance/mixture and of the company/undertaking

Product identifier	
Trade name	: Butane n- , BUTANE N- (N20, N25, N35)
SDS Nr	: 014-ALD
Chemical description	: Butane n- CAS No :000106-97-8 EC No :203-448-7 Index No :601-004-00-0
Chemical formula	: C4H10
Registration-No.	: Registration deadline not expired.
Use	: Industrial and professional. Use only by trained employees according to users risk assessment at workplace.
Company identification	: AIR LIQUIDE Deutschland GmbH Hans-Günther-Sohl-Straße 5 D-40235 Düsseldorf Deutschland Telefon: +49 (0)211 6699-0 - Fax: +49 (0)211 6699-222
E-Mail address (competent person):	: info.SDB@airliquide.de
Emergency telephone number	: +49 (0)2151 398668

2 Hazards identification

Classification of the substance or mixture

Hazard Class and Category Code
Regulation EC 1272/2008 (CLP)

- **Physical hazards** : Flammable gases - Category 1 - Danger (H220)
Gases under pressure - Liquefied gas - Warning (H280)

Classification EC 67/548 or EC 1999/45 : F+; R12

Label elements

Labelling Regulation EC 1272/2008 (CLP)

- **Hazard pictograms**



- **Hazard pictograms code** : GHS02 - GHS04
 - **Signal word** : Danger
 - **Hazard statements** : H220 : Extremely flammable gas.
H280 : Contains gas under pressure; may explode if heated.
 - **Precautionary statements**
 - **Prevention** : P210 : Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
 - **Response** : P377 : Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 : Eliminate all ignition sources if safe to do so.
 - **Storage** : P403 : Store in a well-ventilated place.
- Labelling EC 67/548 or EC 1999/45**
Symbol(s) : F+ : Extremely flammable

Butane n-**014-ALD****2 Hazards identification (continued)**

R Phrase(s) : R12 : Extremely flammable.
S Phrase(s) : S9 : Keep container in a well-ventilated place.
S16 : Keep away from sources of ignition - No smoking.

Other hazards

Other hazards : None.

3 Composition/information on ingredients

Substance / Preparation : Substance.

Substance name	Contents	CAS No	EC No	Index No	Registration no	Classification
Butane n-	100 %	106-97-8	203-448-7	601-004-00-0	NOTE 2	F+, R12 ----- Flam. Gas 1 (H220) Liq. Gas (H280)

Contains no other components or impurities which will influence the classification of the product.

Note 1: Listed in Annex IV / V REACH, exempted from registration.

Note 2: Registration deadline not expired.

4 First aid measures**First aid measures**

- Inhalation : In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.
In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

- Skin/eye contact : For liquid spillage - flush with water for at least 15 minutes.

- Ingestion : Ingestion is not considered a potential route of exposure.

5 Fire-fighting measures

Specific hazards : Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products : Incomplete combustion may form carbon monoxide.

Extinguishing media

- Suitable extinguishing media : All known extinguishants can be used.

Specific methods : If possible, stop flow of product.
Move away from the container and cool with water from a protected position.
Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.

Special protective equipment for fire fighters : In confined space use self-contained breathing apparatus.

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6 Accidental release measures

- Personal precautions** : Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Evacuate area.
Ensure adequate air ventilation.
Eliminate ignition sources.
- Environmental precautions** : Try to stop release.
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
- Clean up methods** : Ventilate area.

7 Handling and storage

- Handling** : Take precautionary measures against static discharge.
Suck back of water into the container must be prevented.
Purge air from system before introducing gas.
Do not allow backfeed into the container.
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Keep away from ignition sources (including static discharges).
Refer to supplier's container handling instructions.
Secure gas cylinder against overturning.
- Storage** : Segregate from oxidant gases and other oxidants in store.
Keep container below 50°C in a well ventilated place.
Secure gas cylinder against overturning.

8 Exposure controls/personal protection

- Personal protection** : Ensure adequate ventilation.
Do not smoke while handling product.
- **Hand protection** : Leather safety gloves when handling cylinders.
 - **Eye protection** : eye protector to shut tightly.
 - **Body protection** : Wear safety shoes when cylinders / bundles / containers are handled.
- Technical protective measures** : Provide adequate general and local exhaust ventilation to maintain concentration(s) below flammability and exposure limits (if existing).
- Occupational Exposure Limits** : Butane n- : TLV© -TWA [ppm] : 800
Butane n- : Arbeitsplatzgrenzwert AGW - Germany [mg/m³] TRGS 900 : 2400
Butane n- : AGW - Germany [ppm] : 1000
Butane n- : Spitzenbegrenzung / Überschreitungsfaktor AGW - Germany TRGS 900 : 4

9 Physical and chemical properties

- Physical state at 20 °C** : Gas.
- Colour** : Colourless gas.
- Odour** : Sweetish. Poor warning properties at low concentrations. Stenchant often added.
- Molecular weight** : 58
- Melting point [°C]** : -138
- Boiling point [°C]** : -0.5
- Critical temperature [°C]** : 152

Butane n-**014-ALD****9 Physical and chemical properties (continued)**

Vapour pressure [20°C]	: 2 bar
Relative density, gas (air=1)	: 2.1
Relative density, liquid (water=1)	: 0.6
Solubility in water [mg/l]	: 88
Flammability range [vol% in air]	: 1.4 to 8.5
Auto-ignition temperature [°C]	: 365
Other data	: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 Stability and reactivity

Hazardous decomposition products	: None.
Incompatible materials	: Air, Oxidiser. Can form explosive mixture with air. May react violently with oxidants.
Conditions to avoid	: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

11 Toxicological information

Acute toxicity	: No known toxicological effects from this product.
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12 Ecological information

Ecological effects information	: No known ecological damage caused by this product.
WGK class (Germany)	: NWG - nicht wassergefährdend Kenn-Nr. 561 (gemäß VwVwS; Anhang 1)

13 Disposal considerations

General	: Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required.
Industrial waste number	: 16 05 04 - gases in pressure containers (including halons) containing dangerous substances.

14 Transport information

UN number	: 1011
• Labelling ADR, IMDG, IATA	



: 2.1 : flammable gas.

Land transport

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14 Transport information (continued)

ADR/RID

- **H.I. nr** : 23
- **UN proper shipping name** : BUTANE
- **Transport hazard class(es)** : 2
- **ADR/RID Classification code** : 2 F
- **Packing Instruction(s) - General** : P200
- **Tunnel Restriction** : B/D Tank carriage: Passage forbidden through tunnels of category B, C, D and E;
Other carriage: Passage forbidden through tunnels of category D and E

pressure cans

- **UN No.** : 2037
- **H.I. nr** : -
- **Proper shipping name** : RECEPTACLES, SMALL, CONTAINING GAS (GAS CATRIDGES)
- **Class** : 2
- **Classification code** : 5 F
- **Packing Instruction(s)** : P003

Sea transport

IMO-IMDG

- **Proper shipping name** : BUTANE
- **Class** : 2.1
- **IMO Packing group** : P200
- **Emergency Schedule (EmS) - Fire** : F-D
- **Emergency Schedule (EmS) - Spillage** : S-U
- **Instructions - Packing** : P200

Air transport

ICAO/IATA

- **Proper shipping name** : BUTANE
- **Class** : 2.1
- **Passenger and Cargo Aircraft** : DO NOT LOAD IN PASSENGER AIRCRAFT.
- **Cargo Aircraft only** : Allowed.
- **- Packing instruction** : 200

Other transport information

Avoid transport on vehicles where the load space is not separated from the driver's compartment.

Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

Before transporting product containers :

- Ensure that containers are firmly secured.
- Ensure cylinder valve is closed and not leaking.
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
- Ensure valve protection device (where provided) is correctly fitted.
- Ensure there is adequate ventilation.
- Compliance with applicable regulations.

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15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture** : Ensure all national/local regulations are observed.
[German regulations]
Betriebssicherheitsverordnung, Technische Regeln zur
Betriebssicherheitsverordnung (TRBSen),
Gefahrstoffverordnung, Technische Regeln zur Gefahrstoffverordnung (TRGSen),
BGVR, BGV, BGI, VwVwS, BGI104
- Seveso regulation 96/82/EC** : Listed

16 Other information

Ensure operators understand the flammability hazard.
The hazard of asphyxiation is often overlooked and must be stressed during operator training.
This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

DISCLAIMER OF LIABILITY : Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.
Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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